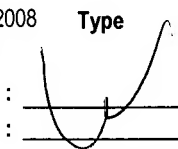


Date: Thursday, 06/11/2008 2:04:14 PM  
 User: Linda Lacelle

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	6" MIRROR
<b>Job Number</b> :	43235		
<b>Estimate Number</b> :	10101		
<b>P.C. Number</b> :		<b>Part Number</b> :	D2011101
<b>This Issue</b> :	06/11/2008	<b>Drawing Number</b> :	D2011 REV G
<b>Prsht Rev.</b> :	NC	<b>Project Number</b> :	N/A
<b>First Issue</b> :	06/11/2008	<b>Drawing Revision</b> :	G
<b>Previous Run</b> :	40739	<b>Material</b> :	
<b>Written By</b> :		<b>Due Date</b> :	13/11/2008
<b>Checked &amp; Approved By</b> :		<b>Qty:</b>	34
<b>Comment</b> :	Est: J 04.09.15 Added Steps 5-7 KJ/JLM Est: K 05.12.15 chg black sikaflex for white EC Est L 08.11.06 new drawing EC verify: DD	<b>Um:</b>	Each

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
----------------	------------------------------	----------------------

1.0	PG	PURCHASING
-----	----	------------



Comment: PURCHASING

2.0	CHM10601	Mirror 6"
-----	----------	-----------



R10: 7526 C20811106

(31)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 30.0000 Each(s)  
 Mirror 6"

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1  
 Recieve & Inspect for Transit Damage  
 Ensure Material Release Note is attached

R 8/4/14 (31)

4.0	QC6	DIMENSIONAL CHECK
-----	-----	-------------------



Comment: DIMENSIONAL CHECK

S 08/11/18 (31) counter

5.0	D2829	Threaded Stud
-----	-------	---------------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 30.0000 Each(s)  
 Threaded Stud

B43254

E 08/11/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 06/11/2008 2:04:14 PM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 6" MIRROR

Job Number: 43235

Part Number: D2011101

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

D30141

Locknut



Comment: Qty.: 1.0000 Each(s)/Unit Total: 30.0000 Each(s)

Locknut

Pick:

Qty Part Number Description Batch

1 D3014-1 Lock nut *025021*

*08/11/19*

7.0

AN960JD416L

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total: 30.0000 Each(s)

Washer

Pick:

Qty Part Number Description Batch

1 AN960JD416L Washer *14109388*

*08/11/19*

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1- Discard Hardware & Install new hardware loosely

2- Crimp stud as per Dwg D2011

*08/11/19 (31)*

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

4- Test assembly to 500lbs pull test after 24 hours

*Soaker counter (x30)*

*Done at step 4.0 5*

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *ST 221*

*08/11/20 (x3)*

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*08/11/24*

Job Completion



*MF 08-11-21*

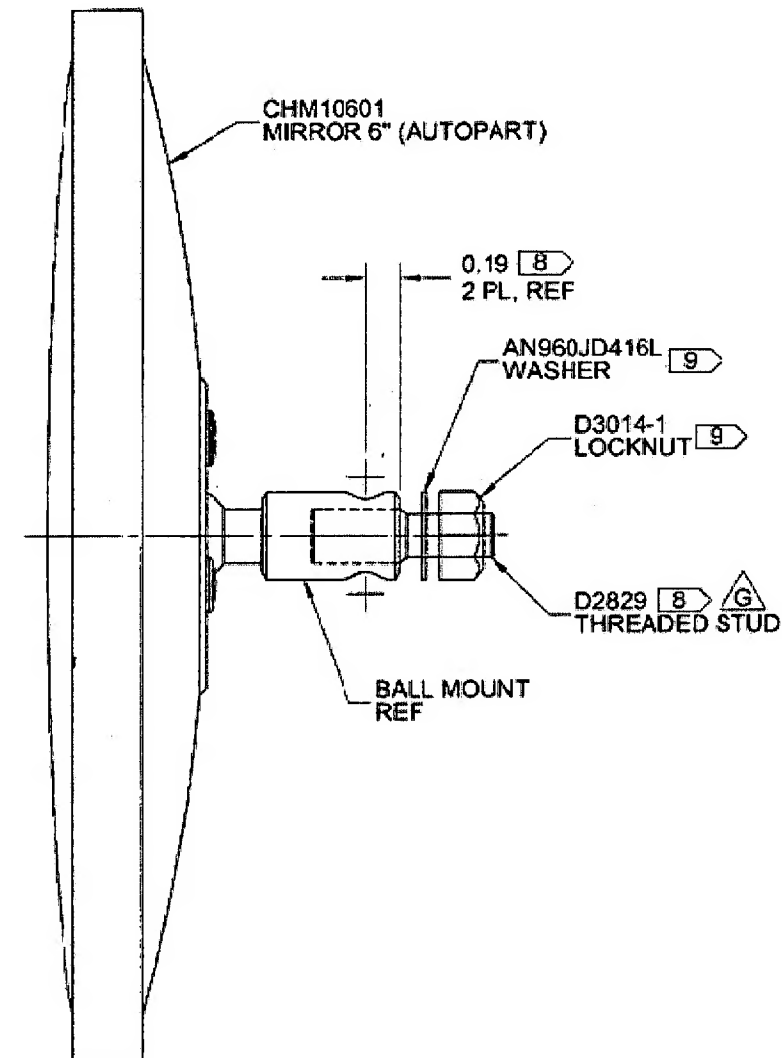
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

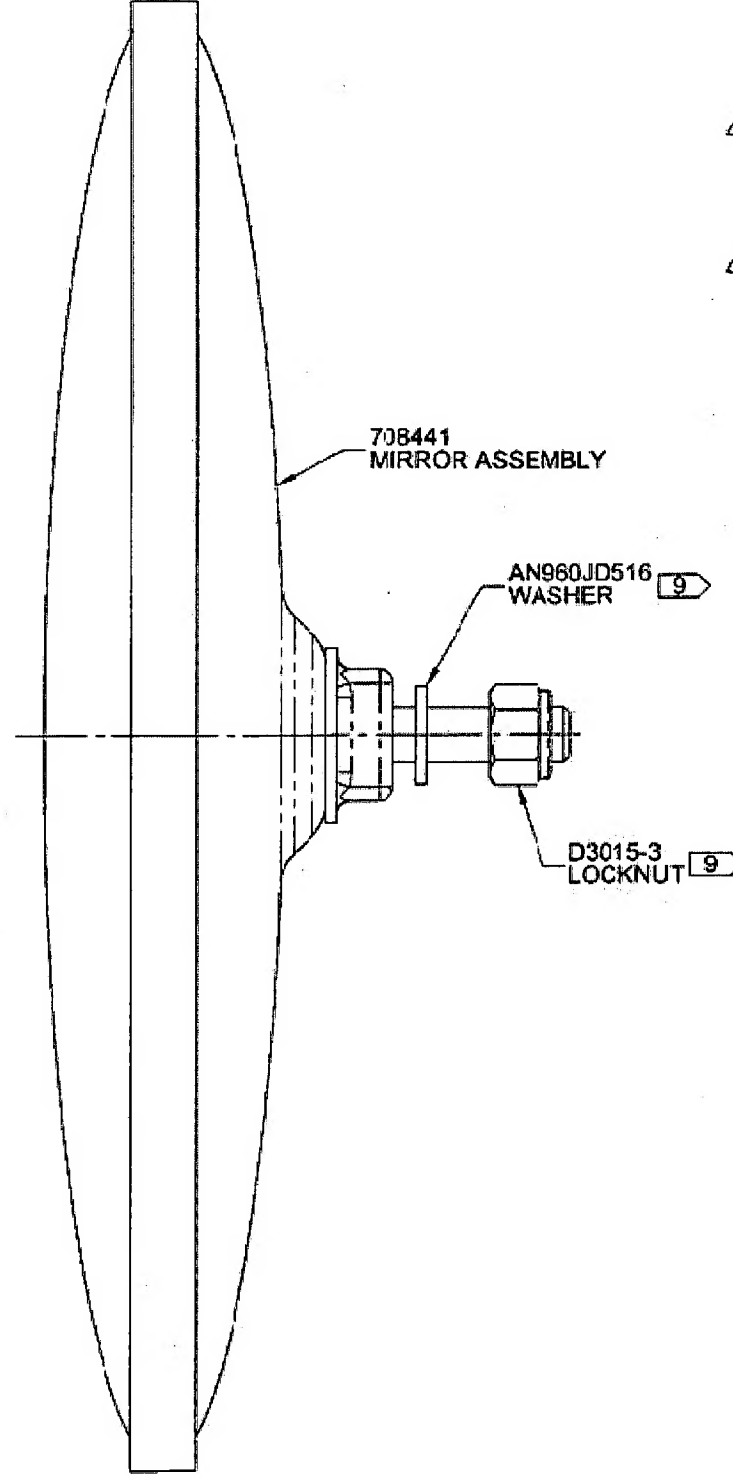
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**D2011-101 MIRROR ASSEMBLY 6"**



**D2011-103 MIRROR ASSEMBLY 8"**

- NOTES:**
- 1) MATERIAL: N/A
  - 2) FINISH: N/A
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: D2011-101 = 0.6 lbs APPROX. ; D2011-103 = 1.0 lbs APPROX.
  - 8) D2829 INSTALLATION PROCEDURE:
    - APPLY LOCKTITE 262 TO Ø5/16 END OF D2829
    - THREAD BY HAND INTO BALL MOUNT UNTIL ENTIRE Ø5/16 END OF D2829 IS WITHIN BALL MOUNT
    - CRIMP BALL MOUNT ON TWO OPPOSING SIDES, 0.19 FROM END AS ILLUSTRATED USING TOOL DT8317
    - CRIMP TO DEPTH OF 0.040±0.010 USING R0.125
  - 9) INSTALL LOOSE

ITEM	QTY -101	QTY -103	P/N	DESCRIPTION
1	X		D2011-101	MIRROR ASSEMBLY 6"
2		X	D2011-103	MIRROR ASSEMBLY 8"
3	1		D2829	THREADED STUD
4	1		D3014-1	LOCKNUT
5		1	D3015-3	LOCKNUT
6	1		CHM10601	MIRROR 6" (AUTOPART)
7		1	708441	MIRROR 8" (VELVAC)
8	1		AN960JD416L	WASHER
9		1	AN960JD516	WASHER

G	REDRAWN IN SOLIDWORKS TO CURRENT STANDARD AND TRANSFERRED TO "B" SIZE FORMAT. MIRROR 6" (AUTOPART) AND CHM10601 WERE MIRROR 6" (GROTE) AND P/N 28043 (ZN D3-1); ADDED D2829 (ZN D3-1 AND ZN C6-1); REMOVED DRILLING NOTE, VIEW A-A AND SIKAFLEX APPLICATION NOTE. REASON: GROTE PRODUCT IS DISCONTINUED	MB	08.10.06
F	ADD HOLES FOR SEALANT ON -101	CP	04.08.10
E	NEW 8" MIRROR	CP	01.05.08
D	NEW 6" MIRROR, ADD NUT, REMOVED STUD	CP	01.04.23
C	REPLACE DOMINION AUTO MIRRORS WITH PHILLIPS, ADDED STUDS, REDRAWN	RF	99.05.01
B	SIKAFLEX 241 ADDED	JB	98.04.09
A	DWG NO. WAS DSP1011, ADDED -103	JB	90.06.15
-	NEW ISSUE	JB	90.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	JB	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. <b>D2011</b> REV. G SHEET 1 OF 1 TITLE <b>MIRROR ASSEMBLY</b> SCALE NTS COPYRIGHT © 1991 BY DART AEROSPACE LTD <small>THIS DOCUMENT &amp; PRIVATE AND PROPRIETARY AND IS SUPPLIED ON THE CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.10.06		

**RELEASED**  
08-10-29-11

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UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK OFFICIAL  
NO. 43235





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TRUCK PARTS • PIÈCES DE CAMION  
ENGINE-MARINE • MOTEUR-MARINE  
PERFORMANCE PARTS • PIÈCES DE PERFORMANCE  
TIRES • PNEUS**



Past due accounts bear 2% interest per month (24% per annum). If this account is placed with a 3rd party collection, an administrative cost of 25% will be added. All exchanges and refund claims must be accompanied by this invoice. Electrical parts not returnable. All parts returned are subject to 20% handling charge. All merchandise sold on this invoice remains the vendor's property until this invoice is paid in full.  
TERMS: Payment due on 10th day of the following month.

Aucun remboursement sans cette facture. Net 30 jours, 2% de frais d'intérêt par mois (24% par année) sur compte en souffrance. 20% de frais de manutention sur toute marchandise retournée. Clause pénale: une indemnité de 25% sera chargée sur compte sujet à des procédures légales. Les marchandises mentionnées sur cette facture demeurent la propriété du vendeur tant qu'elles ne seront pas entièrement payées. Pièces électriques non-retournable.  
TERMS: Compte payable le 10 du mois suivant.

SIGNATURE \_\_\_\_\_

1000 RUE LANDSDOWNE HAWKESBURY, ON K6A 1H7  
TEL: (613)632-1191 FAX: (613)632-2350

GST / TPS  
10035 3366 RT0001

TVQ  
1016330716 TQ0001

New Ontario Environmental Protection Fees will be in effect July 1st 2008  
More information can be found at [www.stewardshipontario.ca/mhsw](http://www.stewardshipontario.ca/mhsw)

113336 (613)632-5200  
S V DART AEROSPACE LTD.  
1270 ABERDEEN STREET  
HAWKESBURY ON K6A 1K7

EXPEDITION  
SHIPPIER  
TO A

113336

\*\*\* SAME \*\*\*

DATE: 11/14/08  
07:54  
111 MLP

0007526

ORD / COM	SHIP / EXP	CODE	PART No / PIÉCES	DESCRIPTION	LIST EACH / CHACUN	COST / COÛTANT	EXTENSION	
31	31	TWD>	CHM10601	6 CONV. MIRROR, S/		18.95	587.45	
			twd - 58425	PIECES / CORE	0.00		0.00	
	31	***	SHIP VIA	REGUL				
				<i>Merci</i>				
				<i>Amel Savet</i>				
INVOICE NO / FACTURE	TYPE / SORTE	TOTAL	DISC	ESC	FRT / TRANS	GST / TPS	PST / TVQ	AMT to PAY / A PAYER
11911213	INVOICE	587.45		0.00	0.00	29.37	0.00	616.82

# DART

## Purchase Order

Date Nov 06, 2008	Page 1
Purchase Order Number PO00007526	

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawksbury, Ontario K6A 1K7  
Phone: (613)632-9577  
Fax: (613)632-1053

**FAXED**  
*62/11/08*

**Vendor Address:**

Auto Parts Extra  
1000 rue Lansdowne  
Hawkesbury, ON K6A 1H7  
Canada  
Phone (613) 632-1191  
Fax (613) 632-2350

**Ship To:**

Main Finished Goods Location  
Dart Aerospace Ltd  
1270 Aberdeen St  
Hawksbury, Ontario K6A 1K7

Reference	Contact	Vendor Number VC-AUT001	PO Date Nov 06, 2008	Terms N30	Ship Via yours	Expected Arrival Nov 10, 2008
-----------	---------	----------------------------	-------------------------	--------------	-------------------	----------------------------------

Qty. Ordered	Item Number	Description	Expected Arrival	Drop-Ship	Unit Cost	UOM	Extended Price
31.0000 <i>P.O. 8/11/17</i>	CHM10601	Mirror 6" B43235 Comments: AS PER DWG D2011 REV. G P/N: CHM10601 B43235	10/11/2008	No	18.950000	Each	587.45
<div>CERTIFICATE OF CONFORMITY REQ'D UPON DELIVERY</div>							

**Comments:****Tax Summary:**

GST 29.37  
GSTME 0.00  
GSTND 0.00

**Less:**

included tax

0.00

Subtotal

587.45

Total tax

29.37

Total purchase order in

CAD Dollars

616.82

Entered By: *CL* CLAYVOIE

Approved By: *W*



## Eric Charbonneau

---

**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** November 18, 2008 2:55 PM  
**To:** 'Eric Charbonneau'; 'Jason Murdoch'  
**Cc:** 'David Duval'; 'Mike Petsche'; 'Marc Bellavance'; 'L Lacelle'; 'Bill Beckett'  
**Subject:** RE: 6" mirror

Eric/Jason,

As discussed at the Engineering Mtg this morning, I am in agreement with Marc's 2nd opinion on the 6" mirror as outlined below. My recollection was that we started testing the 6" mirrors only when we found out the mirror faces were falling out in flight and we had to start gluing them in.

When I reviewed the revised drawing, I noticed that the pull testing was being eliminated. It was my understanding that the new mirror has been tested several times and we don't have the same concern about mirror faces falling out. We currently do not test the 8" mirror at all. It is not general practice to pull something to limit load during production because it tends to weaken the part.

So, I think we should go lean and eliminate the 50 lb pull test on the mirrors.

David

PS. Having said this, mirrors will spontaneously start falling apart again in the air.

---

**From:** Marc Bellavance [rtaero.com <mailto:mbellavance@dartaero.com>]  
**Sent:** Tuesday, November 18, 2008 6:43 AM  
**To:** 'Eric Charbonneau'; 'Jason Murdoch'; 'David Shepherd'; 'Mike Petsche'  
**Cc:** 'David Duval'  
**Subject:** RE: 6" mirror

Come to think of it, and someone please correct me if I'm wrong, the purpose of the test on Rev. F was to ensure that the Sikaflex was holding the mirror to the housing.

With Rev. G, there is no more need for Sikaflex because the mirror passed the pull test and this is why the note has been removed.

I have agreed with Jason in a previous email but I'm changing my position on the basis of what led to the removal of the note.

Furthermore, we are not testing the -103 Mirror and for the same reason.

So I don't see why we need to do the pull test anymore.

### Marc Bellavance

#### Mechanical Designer/Technical Support

*DART aerospace Ltd.*

Tel: 613-632-5200 Ext. 240

Fax: 613-632-9311

E-mail: [HYPERLINK "rtaero.com"mailto:mbellavance@dartaero.com"mbellavance@dartaero.com](mailto:HYPERLINK \)

Web: [HYPERLINK "rtaero.com" http://www.dartaero.com/"www.dartaero.com](http://www.dartaero.com/)

---

**From:** Eric Charbonneau [rtaero.com <mailto:echarbonneau@dartaero.com>]  
**Sent:** November 18, 2008 8:18 AM  
**To:** 'Jason Murdoch'; 'David Shepherd'; 'Mike Petsche'  
**Cc:** 'David Duval'; [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)  
**Subject:** RE: 6" mirror